**TEACHING FOR UNDERSTANDING UNIT/PROJECT ORGANIZER:** You will use this unit/project organizer across several sessions to draft various elements of the TfU Framework. You may be designing a curriculum unit (e.g., a unit of instruction for a classroom, curriculum for a website, etc.) or you may be designing some other type of work project (e.g., a session with your staff, a training program for docents or other specialists or groups, an "in-museum guide," etc.).

We will be working on specific elements of the TfU Framework during Sessions 3, 4, and 5. **You will type in your work related to the specific parts of the organizer that are the focus of each Unit/Project assignments for each of the Sessions—leaving the other parts blank.** (E.g., For **Session 3, we will just focus on the Title of your unit/project** and any other information that you want to complete in the heading except the summary description. **We will also work on your Generative Topic** (plus criteria for a strong Generative Topic), and your Understanding Goals (in both statement and question form)—See Session 3, Assignments 3.2 and 3.3. As our sessions unfold, you may go back at any time and revise any section of this organizer that you completed previously. In fact, you will be asked to do that in some assignments. It will be helpful if you make revisions in a new color of type or date your revision entires.

**HEADING INFORMATION:**

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| **Your Name or Team Names:**  **Walla Walla Community College (Darlene Snider, Karen Kirkwood, Jennifer Leber, Barbara Hoffman)** | **This Column is for Coach Comments** |
| **Date: March 2011** |  |
| **Title of Your Unit or Project: Reading across Precollege courses.** Story Problems: How to take the problem out of the story |  |
| **Setting for the Unit or Project: (classroom, museum, staff meeting, library, etc.) classroom** |  |
| **Subject Area: (e.g., Math, Arts…) Developmental Reading, IBEST, and Math classes** |  |
| **Grade Level: (e.g., Grade 7…) Community College/ adults (including AEP 16+)** |  |
| **Learners Who Will Experience the Unit/Project: \_\_ advanced; X mixed achievement; \_\_other \_X\_\_adults** |  |
| **Approximate Time the Unit or Project May Take: Ongoing, initial teaching a week** |  |
| **Major Resources Needed: math texts** | Can you provide an example please? |
| **Brief Summary of Your Unit or Project: (Write a 3-5 sentence summary describing your unit or project.**  **Students across multiple disciplines (reading, IBEST, math) explore reading strategies that will help them to access information from a variety of sources while simultaneously exploring habits that have kept them from achieving success in the past. They will understand that developing an awareness (and habits) around what students do before, during and after reading helps to ensure that they understand what they are reading- even if it is a math text!**  **We want them to be able to unpack a story problem so they can extract the key points, including what is asked for, what they need to know, and what computational process they need to solve the problem.** |  |

**(OPTIONAL in TfU 1) Throughlines [TLs] – (Skip this section if you do not want to write TLs.** TLs are large, Overarching **Understanding** Goals for an entire year, or quarter, or whole course etc. These general, overarching goals stay the same for every unit/project throughout the entire year, or quarter, etc. Throughlines are OPTIONAL in TfU 1 because they are emphasized in TfU 2).

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| **TL 1**  **Question:**    **Statement:** Learners will understand that… | **TL 2**  **Question:**    **Statement:** | **TL 3**  **Question:**  **.**  **Statement:** Learners will understand that… | **TL 4**  Question:  **Statement:** Learners will understand that… | **This Column is for Coach Comments**  **These are the columns for Throughlines. They are optional in this course.**  **Your Unit Understanding Goals go in the organizer after the Generative Topic section. I will add comments in that section.** |

**Generative Topic [GT]**

**What is your Generative Topic? \_\_** Story Problems: How to take the problem out of the story

**(Write your generative topic on the line above as a phrase, concept, or question from your discipline.)**

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|  | **This Column is for Coach Comments** |
| 1. **Centrality:** (In which discipline do you see your topic as central, and why do you believe this topic of central importance to your discipline?) Being able to read well is key to doing Math well.  * Students have difficulty with story problems. We see story problems as being a more a true reflection of students ability to apply information. * Students are often required to use reading strategies to acquire knowledge or concepts | Many Maths errors are the result of not understanding the problem. Do you see this unit central to Maths or English? |
| 1. **Engagement:** Why will it interest you and your intended audience (learners)--or have the potential to become interesting? How might you make it interesting to your intended audience?  * Reading about “real life situations” will create connections between mathematical concepts and their lives. (ie: understanding your paycheck, paying your taxes) | It is certainly important. How to make it interesting for a diverse group of students is the challenge. Some of these texts are sent and completed electronically. Do you think your students would find those kinds of texts engaging? |
| 1. **Accessibility:** What are 2-3 specific examples of resources related to the topic that are available?  * Authentic forms- paychecks, receipts, taxes, mortgages * Newspaper articles and magazines * Websites- | An interesting range of resources. Newspaper articles that include mathematical information (like graphs, statistics etc) could also be linked to a science, social science or geography topic. |
| 1. **Connections:** How does the topic relate to other topics in the discipline, to other disciplines, and beyond the disciplines to life in the world at large?  * **Science, any training in the trades, daily living** | That’s right. How would that change your Generative Topic? Would the literacy demands of the maths elements then be seen as one of the Understanding Goals? |
| **5.   Challenges:** Describe what may be potential “troublesome knowledge”--        challenges for your intended audience in understanding this topic and        how you might design the project/unit to address likely challenges   * Students don’t always know where to begin when they are reading story problems. * What is the important information and how does it apply to the problem * Critical thinking skill- analyzing, and restating the problem in mathematical terms. | I agree these are all challenges. Do you think understanding the purposes of these texts in our daily lives is also a challenge? |
| **Your Summary Reflection**: (Briefly summarize major points from your analysis of your Generative Topic (above, 1-5). Using some of the points above, explain why this is a strong Generative Topic for your unit/project.  This is a strong topic because: it’s important, and many students recognize this. Because students are aware of the importance, given the right opportunity (performance of understanding) they will find this interesting. Math is all around! There is no problem finding authentic sources of materials. Students use reading strategies all the time, but they don’t always name the strategies which means they don’t always apply them in new contexts. The challenge as we see it is that students have a fear of approaching math, especially story problems. This fear makes their eyes glaze over even before the class begins. | You’ve stated the importance that this topic for student’s everyday lives and acknowledge the importance of questions that engage students.  Perhaps you could strengthen your summary refection with links to the maths discipline. |

**Unit/PROJECT-Level Understanding Goals [UGs]—(**Write three or four goals specific to your particular unit/project. Your unit/project Understanding Goals will eventually lead you to design three to five… Performances of Understanding aimed to help learners reach your Understanding Goals).

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| **UG 1**  **Question:**  **How do I need to read this in order to know where to begin to solve the problem?**  **Statement:**  **Learners will understand that reading strategies can be applied to breaking apart math problems**  All good | **UG 2**  **Question:**  **When or where in my everyday life have I had this problem?**    **Statement:** **Learners will understand that**  **there are multiple connection to their own lives, and realize that they already know something about the problems.** | **UG3 3**  **Question:**  **What do I need to know and do (application of math process) in order to solve this problem?**  **Statement: Learners will understand that through understanding the written word, they will recognize that they need to apply different mathematical concepts/skills to solve different types of real life problems.** | **UG 4**  **Question:**  **How do you see math? Through numbers or through words.**  **Statement:**  **Learners will understand that the same information can be  presented in two ways- written language and numerical language.** | **This Column is for Coach Comments**  **I’d like to tease out some more detail in the statement forms of your Understanding Goals. Thinking about some of the big ideas will help to do this. An example of a big idea is that maths texts differ from other kinds of texts in their organization and language. UGs identify the concepts, processes and skills that we want the students to understand. This exercise will support the stage of the unit as we continue the reversioning process.** |

**Performances of Understanding [PoU]….................. and................……. Ongoing Assessments**

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| **Understanding goals**  (Write the number of the Understanding Goal or Goals that are targeted by each Performance of Understanding? E.g., UG1, or UGs 3 and 4) | **Performances of Understanding**  (What will learners say, do, or make to learn your Understanding Goals and to demonstrate that they understand your Understanding Goals?)  All good | **Ongoing Assessments**  How will you know learners understand? What evidence/criteria should an assessor be looking for in "high quality work/thought in EACH performance?" Give a few examples of what an assessor might predict that learners will do or say or what criteria an assessor might use to assess learner understanding (products, presentations…) in "high level" work for EACH of your Performances? Let the questions below help in the design of your assessments. | **This Column is for Coach Comments** |
| UG1 | **Performance 1** Introductory  Students read and identify the reading strategies they use to help them understand the story problem.  Students will visualize the problem by drawing a picture or diagram that will make the problem real and practical. They will use the Ladder of Feedback with a partner to clarify their illustrations. | **Who** is the assessor?  **What** does the assessor look at. What product or performance?  **How** is the assessor looking (formally, informally)?  **Looking for what**? What is the assessor looking for—**CRITERIA for assessing** (signs of) a high level of understanding? What does the assessor predict students might say; or what is the assessor looking for in student products…? | This is a good introductory performance. All students regardless of level are able to participate and the teacher is able to observe performances and gauge starting points.  Which Understanding Goals are targeted by this PoU? Add to left hand column. |
| UG1 | **Performance 2** Introductory  Students will re-read the problem- this time selecting key math words in the problem.  Students will turn to a partner and compare their words with their partner’s words.  Are they the same or different?  Why did you select these words? | Who?  What?  How?  Looking for what? | I like this activity but was wondering if it was more an early Guided Performance. If students are experiencing difficulties comprehending maths texts they may have difficulty identifying key math words. Would you model this first and do together as a group? See the Ladder of Feedback in my post for suggestions.  Which Understanding Goals are targeted by this PoU? Add to left hand column. |
| UG1 AND UG3 | **Performance 3** Guided (GP1)  Students will refer back to their illustrations and add any new information to it, including labeling the parts, adding measurements and noting any other known, relevant information from the story problem  Then students will write--3 things I know for sure and 1 question that still remains.  Students will then go back to the problem and ask their partners their questions.  Together they will identify the one thing that they still need to know. | Who?  What?  How?  Looking for what? | A good progression, building on Performance 1. This is also another opportunity to check for misconceptions.  Students are actively engaged in the performance, reflecting on previous understandings and demonstrating new understandings. Are they the understandings they will need to complete the Culminating Performances?  Which Understanding Goals are targeted by this PoU? Add to left hand column. |
| UG 1, UG3, UG4 | **Performance 4** Guided  Students will repeat steps for GP 1 and then estimate a range of reasonable answers.  Students will explain to a partner why their estimates are reasonable. | Who?  What?  How?  Looking for what? | Further building on understandings and progressing to using understandings to estimate.  Could more variety be built in these inquiry stages?  Which Understanding Goals are targeted by this PoU? Add to left hand column. |
| UG3 | **Performance 5** Guided  Students will repeat GP 1 and work to decide how to solve the problem: brainstorm formulas they have learned that are related to the story problem, translate ordinary words into mathematical language, set up an equation using that mathematical language and choose variables. Students do the equation and compare with their estimates. | Who?  What?  How?  Looking for what? | The group work has been supportive in developing understandings throughout the sequence. Lots of opportunities for discussion and clarification is also a strong point.  Which Understanding Goals are targeted by this PoU? Add to left hand column. |
| UG1, UG3,UG4 | **Performance 6** Culminating  Students will work with a partner to solve a given story problem. For example, for Math 50:  Suppose that you would like to set aside money today for your child’s college education. Your child is three years old and will be going to college at the age of 18. What amount should you invest today at 8% compounded daily to accumulate $40,000 for your child’s education? | Who?  What?  How?  Looking for what? | Do you think the students might need some additional scaffolding / support to write their own story problems? Eg Jointly constructing a story problem with the teacher with focus on the structure and language features of this type of text?  Which Understanding Goals are targeted by this PoU? Add to left hand column. |
| UG1,UG2,UG3,UG4 | **Performance 7** Culminating  Instructor models the steps to writing a story problem from a student’s life. The example is written on the board.  Students will write their own story problems using an example from their lives. They will choose a math process and write a story around it. | Who?  What?  How?  Looking for what? | I’m wondering whether this performance should precede Performance 6. What do you think in light of the comments for P6?  Which Understanding Goals are targeted by this PoU? Add to left hand column. |

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|  | **Performance 1**  Students self assess reading strategies. Peer assess visual production. Instructor observes and asks clarifying questions.  Assessors look at visual production.  Informally assessed.  The assessors look for evidence that students can conceptualize the problem. Students need to have a basic understanding before they can move to the next step. The assessors use the Ladder of Feedback to assess. | **Who** is the assessor?  **What** does the assessor look at. What product or performance?  **How** is the assessor looking (formally, informally)?  **Looking for what**? What is the assessor looking for—**CRITERIA for assessing** (signs of) a high level of understanding? What does the assessor predict students might say; or what is the assessor looking for in student products…? |  |
|  | **Performance 2**  **Students self assess and peer assess. Instructor puts key math words on board to help students assess and have class discussion on why they chose the words. They see how many they have in common. All assessors look at math vocabulary.**  **Informal assessment.**  **Assessors want to gather evidence that the key words are understood by all students.** | Who?  What?  How?  Looking for what? |  |
|  | **Performance 3**  **Students self assess,and peer assess. Instructor listens to class responses and questions.**  **Instructor guides students to explore their questions and supports them in responding to their peers. Instructors assess students ability to identify the question.** | Who?  What?  How?  Looking for what? |  |
|  | **Performance 4**  **Peer and Instructor assessment**  **Peer- assess if it is a reasonable answer**  **Instructor- assess if the estimated answer is correct**  **Informal**  **Students are able to come up with a logical estimate.** | Who?  What?  How?  Looking for what? |  |
|  | **Performance 5**  **Self and instructor evaluates**  **Self- assess the equation and make edits**  **Instructor- assess whether the answer is correct.**  **Can the student perform the task?**  **Informal or formal(they could hand this in)**  **Individual activity** | Who?  What?  How?  Looking for what? |  |
|  | **Performance 6**  **Peer assessment- students work together to solve the problem. (1st time)**  **Instructor- students work alone to solve the problem and turn in their work (2nd response)**  **Informal and formal assessment**  **The assessors are looking for evidence that student understand the steps and can arrive at the correct answer.**  **The instructors is looking at all the steps to see where students still lack understanding before moving to the final performance.** | Who?  What?  How?  Looking for what? |  |
|  | **Performance 7**  **Instructor assesses students ability to integrate the new knowledge with real life applications.**  **Formal**  **The will review students work which will be submitted to the instructor.**  **The instructor can verify that students are able to apply knowledge in a novel situation.** | Who?  What?  How?  Looking for what? |  |